

IN THE SPECIFICATION:

Please amend the specification by substituting the reference number "17 A" for the reference number "17" on page 6, line 16. Also attached is a version with markings to show changes made.

IN THE DRAWINGS:

Please amend the drawings consistent with the red ink amendments shown on the attached Exhibit A.

REMARKS

An Office Action was mailed in the above referenced application on 7 August 2002. The instant Remarks are intended as responsive to the various objections and rejections set forth in that Action;

OBJECTION TO THE DRAWINGS:

The drawings are objected to under 37 CFR 1.83(a) for failure to properly identify two structural elements described in the specification. Responsive to the Examiner's objection, applicant has amended Figure 1 to clearly identify the two elements identified by the Examiner. In view of this amendment, applicant respectfully submits that the basis of the objection has been obviated.

The drawings are further objected to under 37 CFR 1.84(p)(4). In view of this objection, applicant has amended the specification and Figure 1 to clearly differentiate the hydrophilic filter from the hydrophobic filter. In view of this amendment, the basis of the objection should now be obviated.

In consideration of the amendments to the specification and the drawings, applicant respectfully requests a withdrawal of the Examiner's objections.

INFORMALITY OBJECTION:

Claims 4, 8, 20 and 25 are objected to as not including a period. Responsive to the objection, applicant has amended the aforesaid claims to include a period. In view of the amendment, applicant respectfully requests a withdrawal of the objection.

REJECTION UNDER 35 U.S.C. 112:

Claims 1, 4, 7-17, 20-21 and 24-28 stand rejected under 35 USC 112, first paragraph. Specifically, the Examiner contends that the proper operation of the invention requires the presence of a air vent structure. In the absence of such a structure in the filter described in the aforesaid claims, the Examiner contends that the claims are not enabled. Applicant respectfully traverses the Examiner's rejection.

The Examiner submits that the air vent structure is essential for preventing the introduction of air into the peritoneal cavity. Applicant respectfully disagrees. As stated on page 6 of the applicant's specification, the tube 13, which defines the flow passageway of the filter, is completely enveloped by the filter material 17, i.e. the tube is in a sealed relationship within filter material 17. The filter material 17 is hydrophilic, therefore the filter material 17 constitutes a barrier against the flow of air. It follows that the filter material precludes air residing outside of the tube 13 from entering the passageway defined within the tube 13. When fluid is directed through the filter and thereafter into the peritoneal cavity, the fluid flows initially through the second channel structure and thereafter through the filter and subsequently into the peritoneal cavity. As the fluid flow enters the filter structure the fluid flow is diverted to flow around the filter material 17 and is thereafter forced through the filter material 17. It follows that the fluid must pass through the hydrophilic filter material 17 before it can enter the interior of tube 13.

Furthermore, fluid must pass through the filter 17 before it can enter the peritoneal cavity. Due to its hydrophilic nature the filter material 17 would preclude the introduction of air into the fluid flow which enters into the tube 13. It follows that the filter material 17 would preclude the introduction of air into the tube 13 and thereafter into the peritoneal cavity. Filter material 17 is capable of proper operation without the need for an air vent. The presence of air in cavity 41, outside of the filter material 17, would not preclude the proper operation of the filter material 17. While an air vent may be used in some embodiments of the filter to remove the air from cavity 41 such an air vent is not required in other embodiments of the filter. Claims 1, 4, 7-17, 20-21 and 24-28 are directed to those embodiments which do not require the presence of an air vent. Since the filter is operable without the presence of an air vent, applicant submits that claims 1, 4, 7-17, 20-21 and 24-28 satisfy the provisions of 35 USC 112, first paragraph. Accordingly, the applicant respectfully requests the withdrawal of the rejection of claims 1, 4, 7-17, 20-21 and 24-28 under 35 USC 112.

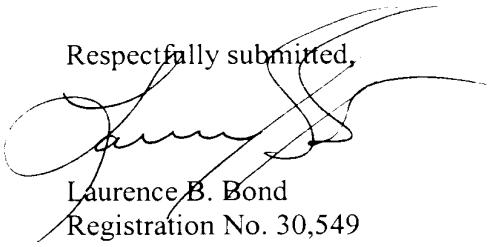
Claims 1, 4, 7, 21-22 and 24 stand rejected under 35 USC 112, second paragraph. In view of the rejection, applicant has amended the aforesaid claims to correct the lack of antecedent basis complained of by the Examiner. IN view of these amendments, applicant submits that the basis of the rejection under 35 USC 112 has been obviated.

Applicant respectfully requests the withdrawal of the rejections under 35 USC 112.

CONCLUSION:

In view of the present amendments to the application and the remarks set forth above, applicant respectfully requests reconsideration of its application.

Respectfully submitted,



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APPENDIX A
VERSION OF CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A medical filter, comprising
a chamber, having
an interior,
a patient connection, in open fluid communication with said interior and adapted for
connection to a dialysis solution flow fixture carried by a dialysis patient,
a transport connection, in open fluid communication with said interior and adapted for
connection to external dialysis solution containment apparatus;
support structure, mounted within said interior, structured as a thin, perforated member, having a
~~relatively very large~~ support surface;
hydrophilic filter medium mounted atop said support surface, having a pore size capable of
separating particulate materials, ~~including bacteria~~, from fresh dialysis solution;
first channel structure within said chamber defining a first flow path from said patient connection
across the surface of said filter medium to said transport connection;
second channel structure within said chamber defining a second flow path from said transport
connection through said filter medium and said ~~perforated~~-support structure to said
patient connection; and
flow control mechanism mounted within said chamber and operable to direct fluid from said
patient connection through said first flow-channel structure and to direct fluid from said
transport connection through said second flow-channel structure.

4. (Amended) A medical filter according to Claim 1, wherein
said ~~filter~~ support structure comprises an inner conduit, with an open interior defined by a first
wall, having a first end, a second end and a perforated section between said first and
second ends;
said first flow-channel structure is structured to accommodate flow through said inner conduit;

said flow control mechanism comprises a check valve positioned at said second end, structured and arranged to permit flow from said inner conduit through said transport connection; said inner conduit is positioned with an outer housing structured and arranged to define second flow channel structure exterior of said perforated section; said filter medium is positioned adjacent said perforated section such that fluid flow from said fluid passageway to said open interior must pass through said medium; and said flow control mechanism further comprises valve means at said first end, structured and arranged to permit fluid flow from said second flow channel structure, through said perforated section, through said open interior and out said patient connection.

7. (Amended) A medical filter according to Claim 1, wherein said filter medium comprises thin sheet material configured to cover the perforations of said ~~perforated~~-support structure.

21. (Amended) A medical filter, comprising a container with an interior volume in open fluid communication with a patient connection element and a transport connection element; filter support structure mounted within said interior volume and including a plurality of filter elements arranged in approximately parallel stacked arrangement, whereby to define a plurality of approximately parallel flow paths straddling said filter elements, each said filter element including first and second panel members, each having an exterior surface and an interior surface with apertures extending between said exterior and interior surfaces, first and second edge members connecting said panel members at the respective interior surfaces of said panel members, whereby to enclose an interior fluid flow zone within said filter element, said edge members having exterior and interior surfaces and carrying ports arranged to permit liquid to pass through said first edge member, through said flow zone between opposed said edge members and out said second edge member,

hydrophilic filter medium mounted to the exterior surfaces of said first and second panel members to cover said perforations apertures; and

flow control structure within said interior volume constructed and arranged to:

cause liquid introduced through said patient connection structure element to flow through said first edge member, through said zone, out said second edge member, and then across said exterior surfaces of said panel members to said transport connection element; and

cause liquid introduced through said transport connection member element to flow into said interior volume to surround said filter elements, through said filter medium into said interior zone and out said ports in said first edge member to said patient connection structure element.

22. (Amended) A medical filter according to Claim 21, wherein said further including a second channel structure includes having a portion in communication with an air vent structure constructed and arranged to release air from a solution flowing through said interior volume while retaining said solution within said interior volume.

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APPENDIX B
VERSION OF SPECIFICATION WITH MARKINGS TO SHOW CHANGES MADE

resilient material having physical properties selected to ensure that the tube 13 will retain its shape under a small stress and if deformed under a higher stress, will return to approximately its original shape once the stress has been removed. Filter material 17 is wrapped around the perforated tube 13 in a sealed relationship, such that all of the holes 14 in the perforated portion 15 are covered by a membrane of filter material 17. The filter material is hydrophilic, and allows the flow of liquid but constitutes a barrier against the flow of air. The holes 14 in the tube 13 are positioned within the region 15 between boundaries 19, 21 defined by circumferential sealed interfaces between the filter membrane 17 and the exterior surface of the tube 13. One end 23 of the perforated tube 13 is provided with a check valve 25 that allows flow only in a direction away from the patient's peritoneal cavity. The other end 27 of the perforated tube 13 is connected to an end cap 29. The end cap 29 has a connection 31 for attaching the filter 11 to the patient (not shown). The filter material, perforated tube, and check valve are encased in an outer cover 33 that may be either flexible or rigid. The outer cover 33 is provided with air vents 35 that permit the passage of air in either direction, but hydrophobic material 17A is positioned to cover the air vents so that neither bacteria nor other particulate materials are able to enter the filter 11. The hydrophobic material ideally comprises a 0.2 micron absolute filter material. The outer cover is provided with a fitting, such as an end cap 37, which includes a connection 39 structured appropriately for attaching the filter 11 to a pressure device (not shown), typically a pump conventional to CAPD procedures. The pressure device is preferably capable of adjusting the pressure in the filter 11 selectively to either above or below the pressure in the peritoneal cavity of the patient.

In a typical application, once the filter 11 is in place, with fixture 31 connected to tubing installed in the peritoneal cavity of a patient and connection 39 attached to a pump and waste container in conventional CAPD fashion, the peritoneal cavity is drained by operating the pump to reduce the pressure in the filter 11 to below the pressure in the peritoneal cavity. Fluid flows out of the peritoneum, through the perforated tube 13, through the check valve 25 and to a waste container (not shown), via connection 39. As fluid flows through the perforated tube 13, it sweeps air out of the perforated tube 13. The vacuum caused by the flowing fluid inherently pulls any air entrapped between the membrane 17 and the perforated tube 13 out past the check



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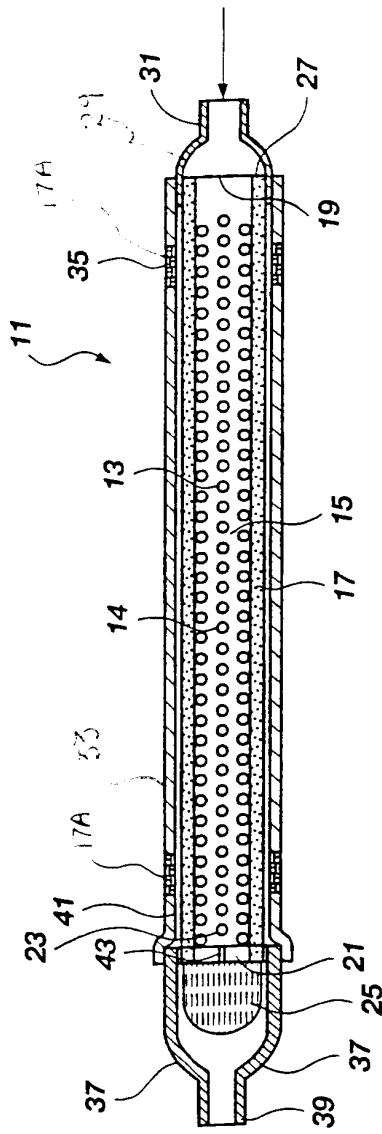


Fig. 1

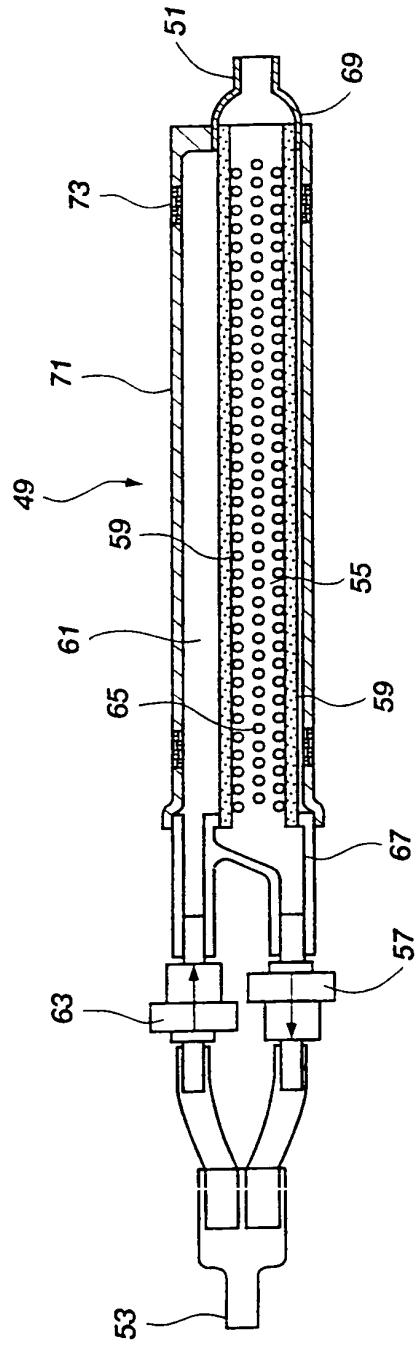


Fig. 2